Practitioner's Docket No. ET 98-41 D2 *PATENT*

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Michael Jude Iosue

Application No.: 10/765,538
Confirmation No.: 1649
Filed: January 27, 2004

Group No.: 2879

Examiner: Dalei Dong

For: NIGHT VISION DEVICE AND METHOD

Commissioner for Patents
Washington, D.C. 20231

ATTENTION: Board of Patent Appeals and Interferences

APPEAL BRIEF
(37 C.F.R. § 41.37)

Introduction

This brief is in furtherance of the Notice of Appeal, filed in this case on June 26, 2006. A Pre-Appeal Brief Request for Review was filed June 26, 2006. The Notice of Panel Decision from Pre-Appeal Brief Review was mailed August 3, 2006 and reset the time period for filing an appeal brief to be one month from the mailing date of the Panel Decision.

The fees required under § 41.20 are being paid concurrently upon filing of this brief.

Table of Contents

The page before the "Other Material" segment of this brief bears the practitioner's signature.

I. REAL PARTIES IN INTEREST
(37 C.F.R. § 41.37(c)(1)(i))

The real party in interest in this appeal is: Litton Systems, Inc., which is a subsidiary of Northrop Grumman Corporation.

II. RELATED APPEALS AND INTERFERENCES
(34 C.F.R. § 41.37(c)(1)(ii))

With respect to other appeals or interferences that will directly affect, or be directly affected by, or have a bearing on the Board's decision in this appeal: there are no such appeals or interferences that will directly affect, or be directly affected by, or have a bearing on the Board's decision in this appeal.

III. STATUS OF CLAIMS
(37 C.F.R. § 41.37(c)(1)(iii))

A. TOTAL NUMBER OF CLAIMS IN APPLICATION

Claims in the application are: 16-19

B. STATUS OF ALL THE CLAIMS IN APPLICATION

1. Claims canceled: Applicant has cancelled claims 1 to 15, and 20-26 that were prosecuted in the parent and related cases to the grants of U.S. patent numbers 6,483,231 and 6,724,131.
2. Claims withdrawn from consideration, but not canceled: NONE
3. Claims objected to: NONE
4. Claims allowed or confirmed: NONE
5. Claims rejected: 16-19

C. CLAIMS ON APPEAL

The claims on appeal are: 16-19

IV. STATUS OF AMENDMENTS
(37 C.F.R. § 41.37(c)(1)(iv))

A proposed Amendment After Final was filed 23 December 2005, but the Amendment After Final was not entered because it was stated that the amendment raised "new issues that would require further consideration and/or search." Therefore, the claims attached as Appendix A are the current claims.

V. SUMMARY OF CLAIMED SUBJECT MATTER
(37 C.F.R. § 41.37(c)(1)(v))

Claim 16 is the sole independent claim and the remaining claims 17 through 19 are directly or indirectly dependent upon that one.

According to claim 16, a method of making an image intensifier tube (14 of Fig. 2; specification p. 8, line 13) comprises providing an annular tube body (18 of Fig 2; specification p. 8, line 15); providing a microchannel plate (24 of Fig. 4; specification p. 8, line 21) disposed within the tube body; providing an electrical contact structure (22a of Fig. 4; specification p. 12, line 28) between the tube body and the microchannel plate; providing a yieldably deformable and axially-variable sealing structure (58 of Fig. 4; specification p. 13, line 9) sealingly uniting the tube body with a window member (16 of Fig. 4; specification p. 8, line 14), the window member carrying a photocathode (22 of Fig. 4; specification p. 8, line 20); and yielding the axially-variable sealing structure while maintaining a selected fine-dimension spacing between the photocathode and microchannel plate.

According to claim 17, the method of making an image intensifier tube further comprises the step of forming a fine-dimension spacing structure (22a of Fig. 4; specification p. 12, line 28) extending axially between the photocathode and the microchannel plate

According to claim 18, the fine-dimension spacing structure in the method of making an image intensifier tube is formed integrally with the photocathode.

According to claim 19, the method of making an image intensifier tube further comprises the step of providing a yieldably deformable electrical contact structure between the tube body and the microchannel plate.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL
(37 C.F.R. § 41.37(c)(1)(vi))

A first issue for appeal is whether Claims 16 and 19 have been properly rejected under 35 U.S.C. §102 as being anticipated by *Wheeler* (U.S. Patent No. 5,493,111).

A second issue for appeal is whether Claims 17 and 18 have been properly rejected under 35 U.S.C. §103 as being unpatentable over *Wheeler* (U.S. Patent No. 5,493,111) in view of *de Groot* (U.S. Patent No. 5,338,927).

Grouping of Claims

The claims do not stand or fall together for reasons set forth below under ARGUMENT. The rejected claims have been grouped together in the rejection. Appellants urge that each of the rejected claims stands on its own recitation with the claims being considered to be separately patentable for the reasons set forth in more detail below.

Claim 16 is the sole independent claim and the remaining claims are dependent upon the independent claim.

VII. ARGUMENT

This is an appeal from the Final Rejection of April 10, 2006. The Examiner's main ground of rejection is that claims 16 and 18 are unpatentable over U.S. Patent No. 5,493,111 by Wheeler et al. (*Wheeler*) under 35 U.S.C. §102(b). Additionally, the Examiner has further rejected the claims under 35 U.S.C. §103 in view of the same *Wheeler* reference in view of U.S. Patent No. 5,338,927 by de Groot et al. (*de Groot*).

Further Applicant submit that a reasonable interpretation of the cited reference, *Wheeler*, would not have resulted or made obvious the invention recited in the Appellant's claims. Applicant respectfully submits that *Wheeler* in combination with *de Groot* fails to teach each element or limitation as claimed by Applicant in Claims 16 and 19

It was also improper to construe the prior art in the manner suggested by the Examiner to conclude that Claims 17-18 were obvious unless the prior art suggested the desirability of the modification.

None of the grounds for rejecting the claims can be supported either factually or legally for the reasons that will be set forth below.

VII(A). ARGUMENTS--REJECTIONS UNDER 35 U.S.C. § 102

The Examiner has principally rejected the claims as being anticipated by *Wheeler*. It is believed that Claims 16 to 19 are clearly distinguishable over this *Wheeler* reference for the reasons that will be set forth.

The *Wheeler* patent shows an image intensifier tube or photomultiplier having a "braze flange member **52**" that effects the sealing engagement between the window member **16** and the base member **50**. *Wheeler* goes on to further describe the seal 52 as follows:

> "The window **16** is sealed into flange **52** with indium or similar seal material **52'**. Flange member **52** is brazed onto the housing member **50** at step portion **72**." (Col. 7, line 65 to col. 8, line 1)

Independent Claim 16 recites the following elements, the most pertinent to this discussion being presented in bold type for the convenience of the Board:

> 16. A method of making an image intensifier tube, said method including the steps of:
>
> providing an annular tube body;
>
> providing a microchannel plate disposed within said tube body;
>
> providing an electrical contact structure between said tube body and said microchannel plate;
>
> **providing a yieldably deformable and axially-variable sealing structure** sealingly uniting the tube body with a window member, said window member carrying a photocathode; and
>
> yielding said axially-variable sealing structure while maintaining a selected fine-dimension spacing between the photocathode and microchannel plate.

This common definition of "deformable" contrasts with US Patent 5,493,111 to Wheeler *et al.* (*Wheeler)* that describes the seal 52 as a "braze flange member," Col. 6, lines 30-31, or that "[f]lange member 52 is brazed onto the housing member 50," Col. 7, line 65 - Col. 8, line 1. Unlike deformation that is defined as being by stress or force, to braze is defined as using "solder with a high melting point," as shown by the copy of the definition for braze from

Dictionary.com. [a copy of the web page with the dictionary definition is included in the "Other Materials" section at the conclusion of this brief]

Since such **yieldably deformable and axially-variable sealing structure** of the Applicant's invention as claimed is nowhere disclosed nor suggested by *Wheeler*, Applicant suggests that the claimed structure of the present invention is neither identical to nor disclosed by the Wheeler device. Therefore, *Wheeler* cannot anticipate the present claimed invention.

The interpretation of the claims under appeal is further distinguished from *Wheeler* on pages 12 and 13 of the specification. The instant specification at page 12, lines 19-25 explains the term "yieldably deformable" as follows:

> These deformable contact pad structures 56' are **yieldable but shape-retaining**, and are seen in FIG. 5a at a time before the uniting of the window 16 and housing portion 44. In this preparatory condition, the contact pad structures 56' have a height that is greater than that seen in FIG. 4. As will be explained, during manufacturing of the I^2T 14, the contact pad structures 56' are **deformed from their as manufactured, preparatory height as seen in FIG. 5a, to a lesser height** which is dependent upon dimensional variabilities in the components of the I^2T 14. [Emphasis added]

The instant specification further goes on to explain the term "yieldably deformable" at page 13, lines 15-17:

> Most preferably, the contact pads 56' and deformable portion of seal structure 58 both employ a yieldable, sealingly deformable and bondable seal material including indium metal. This seal material including indium metal **will allow the deformable contact pad structures 56' and deformable seal structure 58 both to, yield, cold flow and sealingly cold weld when the components of I^2T 14 are assembled**. [Emphasis added]

Of further assistance to the interpretation of the claim language is the paragraph beginning "As this assembly process is being carried out" at the bottom of page 13, line 26, where it discusses force-versus-displacement.

The common definition of the "deformable" term is as shown by the following definition from Dictionary.com. (**Note** the definition particularly for "physics" situations.)

de·form Pronunciation Key (dĭ-fôrm′)
v. **de·formed, de·form·ing, de·forms**
v. tr.

1. To spoil the natural form of; misshape: *a body that had been deformed by disease.*
2. To spoil the beauty or appearance of; disfigure.
3. *Physics.* To alter the shape of by pressure or stress.
4. *Geology.* To change the original state or size of a rock mass, especially by folding or faulting.

v. intr.

To become deformed. See Synonyms at distort.

Thus the common definition of the "deformable" term clearly contrasts with US Patent 5,493,111 to Wheeler *et al.* (*Wheeler)* that describes the seal 52 as a "braze flange member," Col. 6, lines 30-31, or that "[f]lange member 52 is brazed onto the housing member 50," Col. 7, line 65 - Col. 8, line 1. Unlike deformation that is defined as being by stress or force as it particularly pertains to the physics of situations, to braze is defined as using "solder with a high melting point," as shown by the following definition for braze from Dictionary.com.

braze[1] Pronunciation Key (brāz)
tr.v. brazed, braz·ing, braz·es

1. To make of or decorate with brass.
2. To make hard like brass.

[Middle English *brasen*, from Old English *brasian*, from *bræs*, brass.]

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braze[2] Pronunciation Key (brāz)
tr.v. brazed, braz·ing, braz·es

To solder (two pieces of metal) together using a hard solder with a high melting point.

[Probably from French *braser*, from Old French, *to burn*, from *brese*, hot coal, of Germanic origin. See *bhreu-* in Indo-European Roots.]

braz′er *n.*

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Source: *The American Heritage® Dictionary of the English Language, Fourth Edition*
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braze

v. solder together by using hard solder with a high melting point

In the Final Rejection, pages 2 and 3, the Examiner concluded that *Wheeler* in Figures 1-4 disclosed a method for "providing a yieldably deformable and axially-variable sealing structure (52') sealingly uniting the tube body (12 and 50) with a window member (16)." However, *Wheeler* teaches only a structure in which "window **16** is ***sealed into*** flange **52** ***with indium or similar seal material*** **52'**" with "[f]lange member **52** [being] ***brazed onto the housing member*** **50**." [Emphasis added] Col. 7, line 66 to Col. 8, line 1.

Further, on page 5 of the Final Rejection the Examiner erroneously equates *Wheeler*'s flange member that is "brazed" onto the housing member as being deformable since it is asserted that the flanged member while having been soldered with a high melting point solder is shown as being "bend [*sic*] at two places." However, a part having a "bend" does not teach to one of ordinary skill in the art or suggest that the part is "deformable" as that term is used in the instant specification. For instance, often bends are introduced into materials when formed into parts in order to add strength and rigidity, not to permit the part to be "deformable."

Therefore, *Wheeler* cannot anticipate the present claimed invention since *Wheeler* does not disclose or suggest in common, ordinary use of the terms a yieldably deformable and axially-variable sealing structure.

Moreover, the allegedly prior art devices lack the functional characteristics of the claimed structure of the independent claims in the present application. The cited device requires high heat and a hard solder component that tend to create unintended consequences particularly when working with fine tolerances. The sealing structure of the cited device functions to "provide a highly conductive heat transfer path to the environment." *Wheeler*, Col. 9, lines 30-33. Further, nowhere does *Wheeler* teach that the flange member can have it's shape altered by pressure or stress as is called for by the term deformable.

Finally, since 1902 the Supreme Court has held that a process patent is not anticipated by a prior apparatus capable of use in practicing the process where the apparatus was not so actually used. Carnegie Steel Co. V. Cambria Iron Co., 185 U.S. 403, 22 S. Ct. 698 (1902).

> "A process patent, . . ., is not anticipated by a mechanism which might with slight alterations have been adapted to carry to that process, unless, at least, such use of it would have occurred to one whose duty it was to make practical use of the mechanism described. In other words, a process patent can only be anticipated by

> a prior device of like construction and capable of performing the same function; but it is otherwise with a process patent." 185 U.S. at 424.

Even if the *Wheeler* patent incidentally showed a similar arrangement of parts, if that arrangement is neither claimed nor designed to perform the function of the present invention, the *Wheeler* patent can not act as an anticipation.

Thus, the flange member of *Wheeler* that is brazed onto the housing member with a high melting point type of solder is not equivalent or suggestive of the yieldably deformable sealing structure of the present invention in accordance with any known or common definition of terms.

VII(B). ARGUMENTS—REJECTIONS UNDER 35 U.S.C. § 103

The Examiner has also rejected Claims 17-18 under 35 U.S.C. § 103(a) as being unpatentable over *Wheeler* in view of *de Groot*. Applicant respectfully traverses these rejections for the reasons discussed below.

de Groot teaches an image intensifier tube having "glass beads" as shims **25** between the primary screen **19** and the input face **8**.

> "In the exemplary embodiment shown in FIG. 2, where the shims 25 are constituted by beads, these beads may be fixedly joined to the input face 8 of the slab 7 of microchannels by bonding." *de Groot*, Col. 5, lines 63-66.

Applicant's invention is directed toward an axially variable yielding sealing structure and maintaining a selected fine-dimension spacing between the photocathode and the microchannel plate. Nowhere does *de Groot* teach that any of seals or spacers of the image intensifier components are deformable. Rather, *de Groot* teaches that the primary screen **19** is the component that is "deformable." *de Groot*, Col. 6, lines 26-31.

Moreover, since the beads **25** of *de Groot* are joined to the MCP 7, such are not "formed integrally with said photocathode" as is claimed in claim 18 of the instant application.

The rejection should be removed because there is no teaching or disclosure **in the prior art of record** that would have suggested to the artisan the obviousness of providing a yieldably deformable and axially-variable sealing structure as described in the instant specification.

In order to establish a prima facie case of obviousness, the prior art teachings must be sufficient to suggest to one of ordinary skill in the art making the substitution or modification that is necessary to make the claimed invention, In re Lalu, 747 F.2d 703, 705, 223 USPQ 1257, 1258 (Fed. Cir. 1984), in the absence of applicant's own disclosure.

By the structure included in the method steps Applicant is able to achieve the advantages which have hitherto not been achievable through any adaptation of the prior art. It is therefore believed to be clear that the particular structure of Applicant is extremely important and is not a mere matter of design.

It is improper to use hindsight having read the Applicant's disclosure to "pick and choose" among isolated prior art references to disparage the claimed invention. In re Fine, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). Even where an invention is, as a whole, fully disclosed by a combination of prior art elements, such elements cannot be combined to defeat a patent as obvious unless the art teaches or suggests the desirability of making the combination. ASC Hospital Systems, Inc. v. Montefiore Hospital, 732 F.2d 1572, 221 U.S.P.Q. 929 (Fed. Cir. 1984). Thus, the mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification. In re Fritch, 972 F.2d 1260, U.S.P.Q.2d 1780 (Fed. Cir. 1992). Finally, it is the invention as a whole that is important. Focusing on the obviousness of substitutions and differences, instead of on the invention as a whole, is a legally improper way to simplify the often difficult determination of obviousness. Gillette Co. v. S. C Johnson & Son, Inc., 919 F. 2d 720, 16 U.S.P.Q. 1923 (Fed. Cir. 1990).

The combination of *Wheeler* with *de Groot* fails to teach or suggest these claim elements.

Further dependent Claims 17-18 that depend from independent Claim 16 are also not made obvious by *Wheeler* in view of *de Groot* because they include the limitations of Claim 16 and add additional elements that further distinguish the art. Therefore, Applicant respectfully requests that Claims 16-19 be allowed.

As previously stated, applicant respectfully submits that the combination of the references is based on the hindsight gained from applicant's teaching, and that a person of ordinary skill in the art would not have found it obvious to provide a yieldably deformable and axially-variable sealing structure. Section 103 has been uniformly held to require "a showing of a suggestion, teaching or motivation to combine the prior art references [as] an essential component of an obviousness holding, " quoted in a long line of decision in *In re Lee*, 61 USPQ2d 1430, at 1433.

VIII. APPENDIX OF CLAIMS
(37 C.F.R. § 41.37(c)(1)(viii))

The text of the claims involved in the appeal are:

Claims 1-15 (canceled)

16. A method of making an image intensifier tube, said method including the steps of:

providing an annular tube body;

providing a microchannel plate disposed within said tube body;

providing an electrical contact structure between said tube body and said microchannel plate;

providing a yieldably deformable and axially-variable sealing structure sealingly uniting the tube body with a window member, said window member carrying a photocathode; and

yielding said axially-variable sealing structure while maintaining a selected fine-dimension spacing between the photocathode and microchannel plate.

17. The method of Claim 16 further including the step of forming fine-dimension spacing structure extending axially between said photocathode and said microchannel plate.

18. The method of Claim 17 wherein said fine-dimension spacing structure is formed integrally with said photocathode.

19. The method of Claim 16 further including the step of providing yieldably deformable electrical contact structure between said tube body and said microchannel plate.

Claims 20-29 (canceled)

IX. APPENDIX OF EVIDENCE
(37 CFR § 41.37(c)(1)(ix))

There is no evidence submitted herewith pursuant to 37 CFR §§ 1.130, 1.131 or 1.132.

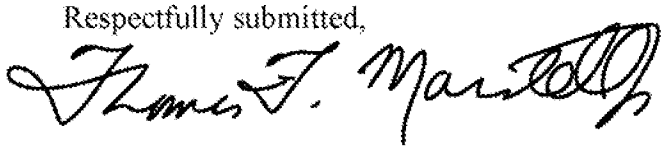
X. APPENDIX OF RELATED PROCEEDINGS
(37 CFR § 41.37(c)(1)(x))

There have been no decisions rendered by a court or the Board in any related appeals or interferences.

Conclusion

In conclusion, the rejection of Claims 16 and 19 under 35 U.S.C. § 102(b) as being anticipated by *Wheeler* and the rejection of Claims 17 and 18 under 35 U.S.C. § 103(a) as being unpatentable over *Wheeler* in view of *de Groot* are thus believed to be improper and should be reversed. The Board of Patent Appeals and Interferences is therefore respectfully required to reverse the rejection of claims 16-19. The application should be returned to the Examiner with directions to allow these claims and pass this application to issue.

Respectfully submitted,



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Date: February 18, 2007

OTHER MATERIAL THAT APPELLANT CONSIDERS NECESSARY OR DESIRABLE

1. *Common definition of "deformable" from Dictionary.com web site.*
2. *Common definition of "braze" from Dictionary.com web site.*

1 entry found for *deformable*.

de·form [p] Pronunciation Key (dĭ-fôrm′)
v. **de·formed, de·form·ing, de·forms**
v. tr.

1. To spoil the natural form of; misshape: *a body that had been deformed by disease.*
2. To spoil the beauty or appearance of; disfigure.
3. *Physics.* To alter the shape of by pressure or stress.
4. *Geology.* To change the original state or size of a rock mass, especially by folding or faulting.

v. intr.

To become deformed. See Synonyms at distort.

[Middle English deformen, from Old French deformer, from Latin dēfōrmāre : dē-, *de-* + fōrma, *form.*]

de·form′a·bil′i·ty *n.*
de·form′a·ble *adj.*

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3 entries found for *braze*.

braze[1] Pronunciation Key (brāz)
tr.v. **brazed, braz·ing, braz·es**

1. To make of or decorate with brass.
2. To make hard like brass.

[Middle English brasen, from Old English brasian, from bræs, *brass*.]

braze[2] Pronunciation Key (brāz)
tr.v. **brazed, braz·ing, braz·es**

To solder (two pieces of metal) together using a hard solder with a high melting point.

[Probably from French braser, from Old French, *to burn*, from brese, *hot coal, of Germanic origin*. See bhreu- in Indo-European Roots.]

braz'er *n.*

braze

v : solder together by using hard solder with a high melting point

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